

FOREST PRODUCTS LABORATORY | FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE

*.4S2224 (Layouts)

SMALL SAWMILL IMPROVEMENT
PRACTICAL POINTERS TO FIELD AGENCIESSMALL MILL CONVEYOR

A conveyor that carries the sawdust, edgings, and boards away from the mill is a labor saver for mills cutting enough at a set to warrant the installation costs. The conveyor shown in figure 1 is of the simple trough type, in which the load is carried by a moving chain with cross bars or lugs spaced at intervals. It extends from the saw pit straight back to a burner and is readily accessible to headsaw and edger sawdust, to the sawed stock as it falls away from the headsaw, and to the edgings and edged boards from the tail end of the edger. Lumber is pulled off this conveyor at a point beyond the mill having sufficient elevation to permit package piling so that the haul-out vehicle can back under the load. If slabs can be utilized, these also may be taken out, cut up, and collected in an elevated bin permitting cheap handling. The cutoff saw would be located along the conveyor and powered by a small power unit separate from that used to run the mill. This feature is not shown in the figure. Provision may also be made to deflect the boards and edgings from the rear of the edger, thus removing the necessity of the tail edgerman. A live roll in the rear edger table plus a platform inclined to carry material by gravity into the trough is required. This possibility is suggested but not shown in the figure. The incline of the conveyor is such that starting below the saw it is slightly below the bed of the rear edger table about 18 feet back of the edger saws, and at the discharge end it is approximately 16 feet above the burner pit. Timbers or ties are taken over dead rolls to the timber dock.

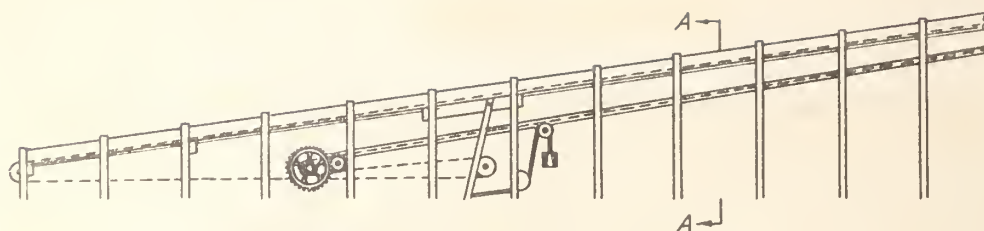
The conveyor chain should be geared to travel about 60 feet per minute. A 5/8-inch chain with an opening about 1-1/2 by 5 inches is suitable. Wooden cleats are attached at approximately 4-foot intervals, but the exact spacing depends upon the diameter and tooth spacing of the drive sprocket; cleats are spaced to ride between adjoining teeth and not to engage them. The cleats are made of hardwood strips, about 1-1/2 by 3 by 16 inches, run through the link and strapped with metal. The plan (fig. 1) shows an idle pulley designed to take up slack. A less desirable drive sprocket with this, and drives through the pulley at the end of the trough under the saw. Details at the burner end are not shown, but provision must be made to forestall burning the conveyor. This is accomplished by using a metal trough inclined from the chain end down into the fire pit. To eliminate, as much as possible, smoke blowing to the mill the burner should be at least 75 feet from the back of the mill and preferably downwind from the prevailing wind direction.

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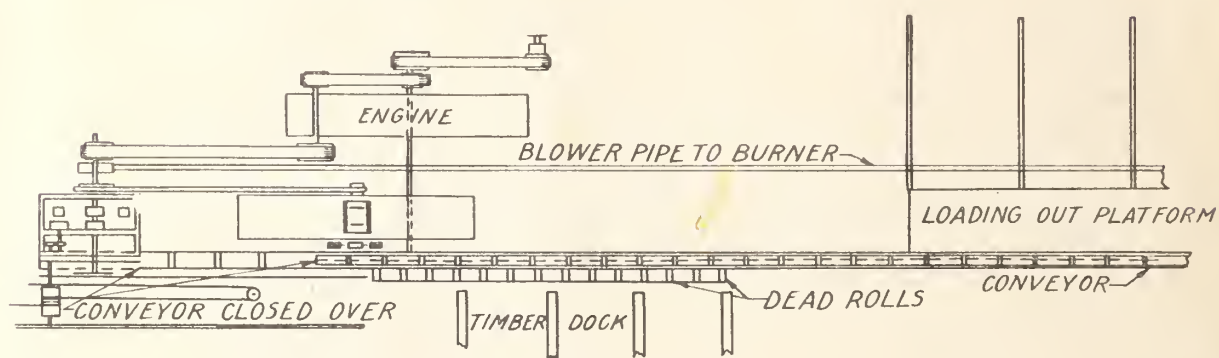
† Maintained at Madison, Wisconsin in cooperation with the University of Wisconsin

*See outline in Small Sawmill Improvement Working Plan, March 1930, for explanation of indexing system proposed

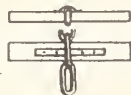
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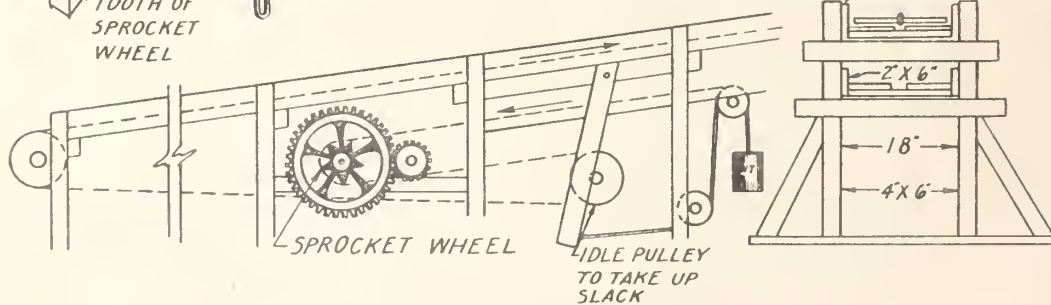
ELEVATION



PLAN VIEW

WINGED
TOOTH OF
SPROCKET
WHEEL

CHAIN CLEATS



SECTION A-A

DETAIL OF DRIVE ASSEMBLY

Figure 1.--Small mill conveyor